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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, HOAN C

ART UNIT PAPER NUMBER

2871

DATE MAILED: 03/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

09/380,256

Applicant(s)

FARIS ET AL.

Examiner

HOAN C. NGUYEN

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-101 is/are pending in the application.

4a) Of the above claim(s) 5-8,11,12,14-16,18-27,33,34,36-46,48,49,51,53-55,57-64,66,67,70,71,73-78,80-83,85-95 and 100 is/are withdrawn from consideration.

- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-4,9,10,13,17,28-32,35,47,50,52,56,65,68,69,72,79,84,96-99 and 101 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-4, 9, 10, 13, 17, 28-32, 35, 47, 50, 52, 56, 65, 68, 69, 72, 79, 84, 96-99 and 101 have been considered but are moot in view of the new ground(s) of rejection. Therefore, the allowances of claims 47, 50, 52, 56 and 65 in the first office action are withdrawn.

Applicant also kindly points out that this application is a 371 application based on International Application PCT/98/03688 filed on 25 February 1998 that has US patent application 08/805603 filed on 26 February 1997 as a prior art document.

### ***Double Patenting***

1. Claims 1-4 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4 of copending Application No. 08/805603 (patent No. US5940150A).

Claims 1 and 9-10 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 8-9 of copending Application No. 08/805603 (patent No. US5940150A).

Claims 1 and 13 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 13 of copending Application No. 08/805603 (patent No. US5940150A).

Claims 1 and 17 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 14 of copending Application No. 08/805603 (patent No. US5940150A).

Claims 1 and 30 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 25 of copending Application No. 08/805603 (patent No. US5940150A).

Claims 1 and 31 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 24 of copending Application No. 08/805603 (patent No. US5940150A).

Claims 1, 79 and 99 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 21 of copending Application No. 08/805603 (patent No. US5940150A). The claim 79 of the present application is broader than claim 21 of copending Application No. 08/805603, thus claim 21 of copending Application No. 08/805603 should provide all limitations in claim 79 of the present application.

All similar dependent claims depend on a broader base claim 1 in the present application comparing to claim 1 in Application No. 08/805603.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the claim 1 in the present application is broader than claim 1 of Application No. 08/805603, in which an electro-optical glazing panel is made of non-linear distribution of CLC (narrower limitation). [In another words, the claim 1 of Application No. 08/805603 provides all limitation of claim 1 in the present application].

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify electro-optical glazing structure as Application No. 08/805603 disclosed without an electro-optical glazing panel made of a non-linear distribution of CLC for reducing manufacture cost with a conventional electro-optical glazing structure.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

1. Claim 32 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 26 of copending Application No. 08/805603 (patent No. US5940150A). Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 32 of the present application is broader than claim 26 of copending Application No. 08/805603, thus claim 26 of copending Application No. 08/805603 should provide all limitation of claim 32 with means of eyeglass controlled EM radiation during stereoscopic 3-D viewing or monoscopic 2-D viewing.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

1. Claim 29 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 25 of copending Application No. 08/805603 (patent No. US5940150A) in view of Lynam (US5239406A).

Lynam (Fig. 9, col. 20, lines 54-57) discloses the electro-electric glazing structure, wherein an ultraviolet reflecting layer 67 for protecting the electro-electric glazing structure from degradation due to ultraviolet radiation (col. 1, lines 35-40).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the electro-electric glazing structure with an ultraviolet reflecting layer for protecting the electro-electric glazing structure from degradation due to ultraviolet radiation

This is a provisional obviousness-type double patenting rejection.

Claims 35 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 25 of copending Application No. 08/805603 (patent No. US5940150A) in view of Weber et al. (US5686979). Weber et al. (Fig. 9) teach an electro-optical glazing structure 136 comprising further means of diffuser/scattering layer 134, a front absorptive polar 138, a rear absorptive polar 140 and a liquid crystal panel 142 for further controlling electromagnetic radiation incident on the an electro-optical glazing panel 136.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the electro-electric glazing structure

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with further means of diffuser/scattering layer for further controlling electromagnetic radiation incident on the an electro-optical glazing panel.

This is a provisional obviousness-type double patenting rejection.

Claims 68 and 84 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 08/805603 (patent No. US5940150A) in view of Sakata (US4729640). Sakata (Figs. 24A-C, col. 1, lines 37-42) discloses a light modulation or an electro-optical glazing structure (same device with different use) comprising:

(a) an electro-optical glazing panel of laminated construction having first and second optical states of operations;

(b) optical state switching means to change voltage for switching electro-optical glazing panel to first optical state of operation in order to induce electro-optical glazing structure into reflection mode of operation and for switching electro-optical glazing panel to second optical state of operation in order induce electro-optical glazing structure into transmission mode of operation;

wherein electromagnetic radiation within a first pre-specified bandwidth falling incident upon the electro-optical panel is totally reflection from the electro-optical panel without absorption (Fig. 24A, col. 23, lines 10-15);

wherein electromagnetic radiation within a second pre-specified bandwidth (that must different from first bandwidth for total reflection) falling incident upon the electro-

optical panel is totally transmission from the electro-optical panel without absorption (Fig. 24C, lines 27-32).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the electro-electric glazing structure; wherein electromagnetic radiation within a first pre-specified bandwidth falling incident upon the electro-optical panel is totally reflection from the electro-optical panel without absorption; wherein electromagnetic radiation within a second pre-specified bandwidth (that must different from first bandwidth for total reflection) falling incident upon the electro-optical panel is totally transmission from the electro-optical panel without absorption for manipulating EM radiation through the electro-electric glazing structure.

This is a provisional obviousness-type double patenting rejection.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "complex levels" in claim 13 is a relative term which renders the claim indefinite. The term "complex levels" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one



of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Applicant needs to clarify how "complex" is "complex levels."

2. Claim 47 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "little difference" in claim 47 is a relative term which renders the claim indefinite. The term "little difference" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Applicant needs to clarify how "little" is "little difference."

3. Claim 50 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. A phrase " wherein the electro-optical panel selectively transmits and reflects electromagnetic radiation of a first band width of the EM spectrum, further comprising a reflector EM radiation which reflects radiation in a second bandwidth" is unclear that what is further comprising a reflector EM radiation.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 32, 35, 47 and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Weber et al. (US5686979).

Weber et al. (Figs. 1-7b) disclose an electro-optical glazing structure comprising

(a) an electro-optical glazing panel of laminated construction having first and second optical states of operations; wherein the electro-optic glazing structure separately controls the transmission and reflection of visible light;

(b) optical state switching means for switching electro-optical glazing panel to first optical state of operation in order to induce electro-optical glazing structure into reflection mode of operation and for switching electro-optical glazing panel to second optical state of operation in order induce electro-optical glazing structure into transmission mode of operation as Figs. 3 and 4 shown.

In regard to claims 32 and 35, Weber et al. (Fig. 9) teach an electro-optical glazing structure 136 comprising further means of diffuser/scattering layer 134, a front absorptive polar 138, a rear absorptive polar 140 and a liquid crystal panel 142 for further controlling electromagnetic radiation incident on the an electro-optical glazing panel 136.

In regard to claims 47 and 50, Weber et al. (Fig. 2) teach an electro-optical glazing structure further comprising a sheet having large plurality of pairs 44 of layers 41 and 43 parallel to a surface of the sheet, each pair of layer having a difference between the materials A and B in each layer of pair, the difference being in the index of refraction for electromagnetic radiation having the first linear polarization, wherein there

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is little difference (col. 6, lines 58-55) in the index of refraction for electromagnetic radiation having the second linear polarization( thus, the polarized light is parallel to transmission axis 40 or 42), the total thickness of each pair of layers in the large plurality of layers varying non linearly/randomly across the sheet, thus sheet will transmit the polarization component of randomly polarized light (col. 6, lines 35-39). An electro-optical glazing panel transmits and reflects electromagnetic radiation of a first bandwidth (400-1200nm) of an EM radiation. However, the sheet having large plurality of pairs reflects in second bandwidth, which covers any of the first bandwidth.

3. Claims 68, 69, 84 and 96 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakata (US4729640).

Sakata (Figs. 24A-C, col. 1, lines 37-42) discloses a light modulation or an electro-optical glazing structure (same device with different use) comprising:

(a) an electro-optical glazing panel of laminated construction having first and second optical states of operations;

(b) optical state switching means to change voltage for switching electro-optical glazing panel to first optical state of operation in order to induce electro-optical glazing structure into reflection mode of operation and for switching electro-optical glazing panel to second optical state of operation in order induce electro-optical glazing structure into transmission mode of operation;

wherein electromagnetic radiation within a first pre-specified bandwidth falling incident upon the electro-optical panel is totally reflection from the electro-optical panel without absorption (Fig. 24A, col. 23, lines 10-15);

wherein electromagnetic radiation within a second pre-specified bandwidth (that must different from first bandwidth for total reflection) falling incident upon the electro-optical panel is totally transmission from the electro-optical panel without absorption (Fig. 24C, lines 27-32).

In regard to claim 96, a light modulation or an electro-optical glazing structure is applied in any bandwidth or broadband of light from 100% transmission or 0% reflection (fig. 24A) to 100% reflection or 0% transmission (fig. 24C). This range covers also spectrum range of 50% transmission or 50% reflection to 100% reflection.

4. Claims 97 and 98 are rejected under 35 U.S.C. 102(b) as being anticipated by Beauchamp et al. (US5449413A).

These two independent claims do not disclose any structural element made of the electro-electric glazing structure. Moreover, "the electro-electric glazing structure" considers as a preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Beauchamp et al. (Figs. 14-16) disclose the structure wherein the transmission over the UV and IR can be totally reflected for reducing heat and avoid the UV degradation as Figs. 7A-B disclosed. The radiation over the visible band is transmitted to the interior environment for being maintained under thermal control.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9, 13, 32, 65, 79 and 101 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weber et al. (US5686979) as applied to claims 1 and 47, and in view of Baughman et al. (US5152111).

In regard to claim 9, Baughman et al. (Figs. 1-6) teach the electro-electric glazing structure further comprising a window frame 5 for mounting the electro-electric glazing panel within house or office building (col. 1, lines 25-29).

In regard to claims 13 and 79, Baughman et al. (Figs. 4-6, col. 9, 28-58) teach the composite electro-electric glazing structure comprising a plurality of the electro-electric glazing structure (7/14/11 and 7'/14'/11'), wherein the composite electro-electric glazing structure has more than two optical states of operation which permit complex levels of electromagnetic radiation control. Besides, words "complex levels" is relative term (see 112 rejection above).

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In regard to claim 32, Baughman et al. (Figs. 4-6, col. 9, 28-58) teach the composite electro-electric glazing structure comprising a means [10 or 10' for preventing heat or IR (col. 4, lines 20-23)] for further controlling electromagnetic radiation incident on the electro-optical panel.

In regard to claim 65, Weber et al. (col. 5, line 60 to col. 6, line 6) teach an electro-optical glazing structure comprising a layer of mixture of a polymer and a liquid crystal material for effective in dynamic scattering at room temperature.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the electro-electric glazing structure as Weber et al. disclosed with (a) a window frame 5 for mounting the electro-electric glazing panel within house or office building; (b) a plurality of the electro-electric glazing structure for manipulating the electromagnetic radiation control; (c) a means with preventing heat or IR for further controlling electromagnetic radiation incident on the electro-optical panel; (d) a layer of mixture of a polymer and a liquid crystal material for effective in dynamic scattering at room temperature.

6. Claims 17, 28, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weber et al. (US5686979) as applied to claim 1, and in view of Meyer et al. (US5336965A).

Meyers et al. (Fig. 2-4, col. 4, lines 46-49) teach the electro-electric glazing structure wherein the transmission of the visible portion of the electromagnetic spectrum

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is controlled and the infrared (IR) portion of the electromagnetic spectrum is reflected.

Fig. 2 shows there is an IR reflecting layer 16.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the electro-electric glazing structure as Weber et al. disclosed with an IR reflecting layer 16 for preventing heat or IR transfer cross the electro-electric glazing structure (IR is presented for heat energy in the electromagnetic spectrum).

7. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weber et al. (US5686979) as applied to claim 1, and in view of Lynam (US5239406A).

Lynam (Fig. 9, col. 20, lines 54-57) discloses the electro-electric glazing structure, wherein an ultraviolet reflecting layer 67 for protecting the electro-electric glazing structure from degradation due to ultraviolet radiation (col. 1, lines 35-40).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the electro-electric glazing structure as Weber et al. disclosed with an ultraviolet reflecting layer for protecting the electro-electric glazing structure from degradation due to ultraviolet radiation

8. Claims 52 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weber et al. (US5686979) as applied to claim 47, and in view of Nilsson (US3833288).

Nilsson (abstract) teaches producing a controllable scattering layer for preventing any appreciable image distortion.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the electro-electric glazing structure as Weber et al. disclosed with comprising a controllable scattering layer for preventing any appreciable image distortion.

9. Claims 2-4 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakata (US4729640) as applied to claims 1 and 68, and in view of Sharp et al. (US5528393A)

In regard to claims 4 and 72, Sharp et al. (Figs. 2b-2d, col. 7, line 9 to col. 8 line 6) disclose the electro-electric glazing structure or split-element liquid crystal tunable optical filter (again both having same structure with different use) comprising:

- first electrically-active/tunable liquid crystal electromagnetic radiation polarizing panel 40 or 50;
- second electrically-active/tunable liquid crystal electromagnetic radiation polarizing panel 45 or 55;
- an electrically-passive  $\pi$ -phase retardation panel 30 interposed between the first and second electrically-active liquid crystal electromagnetic radiation polarizing panels

wherein the liquid crystal is cholesteric liquid crystal CLC (col. 15, lines 43-45).



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In regard to claims 2 and 3, Sharp et al. (Fig. 5c) disclose the electro-electric glazing structure or split-element liquid crystal tunable optical filter comprising:

- first electrically-passive CLC liquid crystal electromagnetic radiation polarizing panel, which has a circularly polarization;
- second electrically-passive CLC liquid crystal electromagnetic radiation polarizing panel, which has a circularly polarization;
- an electrically-active  $\pi$ -phase retardation panel 30 interposed between the first and second electrically-active liquid crystal electromagnetic radiation polarizing panels.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the electro-electric glazing structure as Weber et al. disclosed with comprising the feature disclosed by Sharp et al. for providing wide-field, band-pass, cut-on/off and notch transmission functions.

### ***Conclusion***

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 3756692 discloses photochromic protective eye shield lens.

US 6107564 discloses solar cell cover and coating.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is

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(703)306-0472. The examiner can normally be reached on MONDAY-  
THURSDAY:8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SIKES L WILLIAM can be reached on (703)308-4842. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-8178 for regular communications and (703)308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0530.

HOAN C. NGUYEN  
Examiner  
Art Unit 2871

chn  
February 19, 2002

  
William L. Sikes  
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